

REMARKS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-3 and 26 are presently active in this case, Claims 1, 2, and 26 having been amended and Claims 5-25 having been canceled by way of the present amendment.

Claims 1-3 and 26 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention. The Applicants respectfully traverse this rejection.

The first issue raised in the Official Action notes correctly that the load is assumed to be vertical. The Applicants also note that the load is assumed to be along the guide rail (110). The Official Action then correctly notes that the vertical displacement of the guide rail (11) is restricted. The Official Action then goes on to presume that the guide rail ends are rigidly connected to the elevator shaft at at least one of its top and bottom, which is incorrect. The Official Action is incorrectly presuming that the load is being carried completely by either a connection at the top of the guide rail or a connection at the bottom of the guide rail, thereby removing the load (W) from the equations. The description in the specification does not assume such a connection to the top or bottom of the elevator shaft. The guide rail (110) is described as being mounted to the shaft wall (4) with rail support members (31) composed of brackets (1) and fastening plates (2). (See page 8, lines 4-9.) Of course, it is the rail support members (31) that restrict the vertical displacement of the guide rail (110). And it is important to analyze the forces acting on the rail support members (31) due to the load (W).

The Applicants submit that the description of equations (1) and (2) given on lines 8-16 of the specification is clear to one of ordinary skill in the art. M_1 is defined as the bending

moment working at the junction of the fastening plate (2) and the shaft wall (4). The value of M_1 is dependent upon the connection condition at the junction between the guide rail (110) and the bracket (1).

When the junction between the guide rail (110) and the bracket (1) is defined as a pivot connection (i.e., a freely pivoting connection is provided), then the bracket (1) will act in the same manner as a cantilever beam. In other words, the load (W), which is acting in the vertical direction along the guide rail (110) will create a bending moment (M_1) at the junction between the fastening plate (2) and the shaft wall (4) that is equal to the distance (h) multiplied by the load (W). It is important to note, that since the junction between the guide rail (110) and the bracket (1) is a pivot connection, then this junction does not provide a counteracting bending moment.

When the junction between the guide rail (110) and the bracket (1) is defined as a rigid connection (i.e., pivoting movement between the guide rail (110) and the bracket (1) is restricted), then the bracket (1) will act in a manner different from a cantilever beam due to the bending moment that will be created at the junction between the guide rail (110) and the bracket (1). And, accordingly, the bending moment created at the junction between the guide rail (110) and the bracket (1) will have an effect on the value of the bending moment (M_1) at the junction between the fastening plate (2) and the shaft wall (4). Since the load (W) remains the same as in the first equation, the addition of a bending moment at the junction between the guide rail (110) and the bracket (1) used in determining the second equation, effectively creates an equal sharing of the load (W) between the junction at the guide rail (110)/the bracket (1) and the junction at the fastening plate (2)/shaft wall (4). Accordingly, the bending moment (M_1) present at the junction between the fastening plate (2) and the shaft wall (4) is half of what it was in the first equation.

The specification has been slightly amended to further clarify the description set forth therein. The following is a summary of the description of the invention.

A construction is considered where a load in the longitudinal direction of the guide rail acts on rail (5) due to the cage, the load within the cage, the counterweight, and the drive apparatus (8), etc. The load in the longitudinal direction of the rail is shared by a plurality of brackets. One of these brackets will now be considered.

Let the distance from the wall (4) of the shaft to one end of the bracket (1) be h and the load acting on this portion be W . Taking the bending moment acting on the mounting portion of the fastener (2) to the wall of (4) of the shaft as M_1 , M_1 changes depending on the coupling condition of the end of the bracket (1) and the guide rail. Assuming that the coupling condition is a pin coupling (the connection is called the pivot connection in the specification, and the displacement is restrained but rotation is unrestrained), equation (1) is obtained. If rigid coupling (the connection is called the rigid connection in the specification, and displacement and rotation are both restrained) is assumed, equation (2) is obtained.

Case of pin coupling (pivot connection):

$$M_1 = Wh \quad \dots(1)$$

Case of rigid coupling (rigid connection):

$$M_1 = Wh/2 \quad \dots(2)$$

Furthermore, since the anchor bolts (3A, 3B) constitute upper and lower rows, the anchor bolts on the side (3A) constitute fulcrums and the aforesaid bending moment M_1 can be received by the tensile force (axial force) of the anchor bolts on the side (3B). That is, if the vertical arrangement interval of the anchor bolts is L , the number of anchor bolts per row is n and the tensile force (axial force) acting on the anchor bolts from the side (3B) is F , the bending moment M_2 received by these anchor bolts is given by equation (3). The bending

moment acting on the mounting portion of the fastener (2) to the wall (4) of the shaft indicated by equation (1) or equation (2) can be received by the tensile force (axial force) of the anchor bolts.

$$M_2 = L * F * n \quad \dots(3)$$

If the allowed tension of the anchor bolts is f , from $M_1 = M_2$, L when the tensile force (axial force) F acting on these anchor bolts is equal to f , i.e., the necessary minimum L , is expressed by equation (4) or equation (5) by substituting f for F of equation (3).

Case of pin coupling (pivot connection):

$$L = (W * h) / (f * n).$$

Case of rigid coupling (rigid connection):

$$L = (W * h) / (2 * f * n).$$

As described above, the L indicated by equation (4) or equation (5) give the minimum necessary L dimension. Above this value safety can be satisfactorily guaranteed, but if L is made too large, the dimensions of the fastener (2) become larger than necessary.

On this occasion, the minimum necessary L for the case where the coupling condition of the one end of the bracket (1) and the guide rail is a pin coupling (pivot connection) and the case where it is a rigid coupling (rigid connection) was found, but the actual coupling condition may be assumed to be between pin coupling (pivot connection) and rigid coupling (rigid connection), so rational design can be achieved if L is determined such that equation (4) is assumed to be the upper limit and equation (5) is the lower limit. That is to say, if L is determined as in equation (6), a construction can be obtained wherein the dimensions of the fastener (2) are not unnecessarily large, yet sufficient safety can be ensured.

The Applicants respectfully submit that the specification clearly provides an enabling disclosure of the claimed invention. Accordingly, the Applicants respectfully request the

withdrawal of the enablement rejection.

Claims 1-3 and 26 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The specific grounds for rejection are recited on page 4 of the Official Action. Claim 1 has been amended in a non-narrowing manner to address the indefiniteness rejections raised in the Official Action by clarifying the language set forth therein. Claim 1 recites that “each line of securing members of said at least one plate includes at least one securing member that satisfies an inequality defined as....” This language does not state that each line includes one (or at least one) securing member, but rather defines specific features of at least one securing member in each line of the at least one plate. In fact, Claim 1 earlier defines at least one plate fixed to a wall of said elevator shaft by at least two vertically spaced lines of securing members (plural). Accordingly, the Applicants respectfully submit that the claims are definite under 35 U.S.C. 112, second paragraph, and therefore request the withdrawal of the indefiniteness rejection.

Claims 1-3 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U.S. Patent No. 6,012,554) in view of one of Rousseau (U.S. Patent No. 4,593,794), Ericson et al. (U.S. Patent No. 4,848,519), and Koeppe, Jr. et al. (U.S. Patent No. 5,950,770). For the reasons discussed below, the Applicants traverse the obviousness rejections.

The basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or references when combined) must teach or suggest all of the claim limitations. The Applicants submit that a *prima facie* case of

obviousness has not been established in the present case because there is no suggestion or motivation to combine the references to arrive at the present invention.

The Official Action cites the Ito et al. reference for the teaching of all of the claimed limitations except for how the support members are secured to the wall of the elevator shaft.

The Applicants believe that it is not known in the applied references to provide the securing members as defined in Claim 1 of the present application. The Ito et al. reference is the only one of the applied references that shows a drive device mounted on a guide rail. However, the Ito et al. reference does not address a specific manner of securing the guide rail support members to the elevator shaft, and clearly does not disclose the structure used to secure the guide rail recited in Claim 1. The Ito et al. reference gives no indication of the importance of these connections. In fact, the Ito et al. reference depicts in Figure 5 an embodiment in which the entire structure, including the car guide rail (4), the counterweight guide rail (5), the car (1), and the hoist machine (14), is supported by the bottom surface or floor of the elevator shaft, thereby dramatically lessening the importance of the connections to the side wall of the elevator shaft. Accordingly, based on the teachings of the Ito et al. reference, one of ordinary skill in the art would not have been motivated to be concerned with the specific structure used to connect the elevator to the side wall of the elevator shaft.

The Applicants submit that the secondary references cited in the obviousness rejection do not provide a motivation to combine the teachings set forth therein with the Ito et al. reference to arrive at the present invention. The Applicants note that the Official Action effectively admits that the cited secondary references also do not disclose the securing members as expressly recited in Claim 1 (for example, satisfying the inequality set forth therein), yet the Official Action concludes that discovering such a configuration would involve only routine skill in the art. However, the Applicants submit that the cited secondary

references are directed to structures that differ significantly from the present invention, and those references would not provide one of skill in the art the motivation to modify the teachings of the Ito et al. reference in the manner suggested in the Official Action to arrive at the present invention, absent the use of improper hindsight considerations.

The Rousseau reference clearly depicts in Figure 1 guide rails (26A, 26B, 30A, and 30B) that are supported by the floor and roof of the elevator shaft. While the Rousseau reference describes mounting brackets, the Rousseau reference does not describes securing members as expressly set forth in Claim 1 of the present application. Furthermore, the Applicants submit that the brackets of the Rousseau reference are not as structurally important as the securing members of the present invention, due to the support of the guide rails depicted therein by the floor and roof of the elevator shaft. Accordingly, one of ordinary skill in the art would not have been motivated to provide a securing member that satisfies the inequality set forth in Claim 1 of the present application based on the teachings of the Rousseau reference, and one of ordinary skill in the art would not have been motivated to modify the teachings of the Ito et al. reference to include such a securing member.

The Ericson et al. reference clearly depicts in Figure 1 a hydraulic elevator (10) that has its fully weight supported by a pair of jacks (45) on the floor of the elevator shaft. While the Ericson et al. reference describes clamps (260), the Ericson et al. reference does not describes securing members as expressly set forth in Claim 1 of the present application. Furthermore, the Applicants submit that the clamps of the Ericson et al. reference are not as structurally important as the securing members of the present invention, due to the support of the elevator (10) by the floor of the elevator shaft. Accordingly, one of ordinary skill in the art would not have been motivated to provide a securing member that satisfies the inequality set forth in Claim 1 of the present application based on the teachings of the Ericson et al.

reference, and one of ordinary skill in the art would not have been motivated to modify the teachings of the Ito et al. reference to include such a securing member.

The Koeppe, Jr. et al. reference does not discuss the manner in which the guide rail is mounted within the elevator shaft. While the Koeppe, Jr. et al. reference describes fasteners (12), the Koeppe, Jr. et al. reference does not describe securing members as expressly set forth in Claim 1 of the present application. Furthermore, the Applicants submit that the fasteners of the Koeppe, Jr. et al. reference are not described as being as structurally important as the securing members of the present invention. Accordingly, one of ordinary skill in the art would not have been motivated to provide a securing member that satisfies the inequality set forth in Claim 1 of the present application based on the teachings of the Koeppe, Jr. et al. reference, and one of ordinary skill in the art would not have been motivated to modify the teachings of the Ito et al. reference to include such a securing member.

The Applicants, therefore, respectfully submit that the rejections are based on the improper application of hindsight considerations. It is well settled that it is impermissible simply to engage in hindsight reconstruction of the claimed invention, using Applicants' structure as a template and selecting elements from the references to fill in the gaps. *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991). Recognizing, after the fact, that a modification of the prior art would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. *In re Warner*, 397 F.2d 1011, 154 USPQ 173 (CCPA 1967).

Accordingly, the Applicants respectfully request the withdrawal of the obviousness rejections of Claim 1.

Claims 2, 3, and 26 are considered allowable for the reasons advanced for Claim 1 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 1.

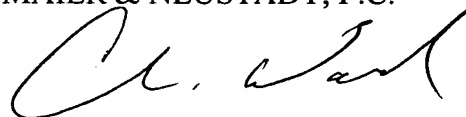
Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Finally, the attention of the Patent Office is directed to the change of address of Applicants' representative, effective January 6, 2003:

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